

Housing and the Welfare Cost of Inflation

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*The views expressed are my own and do not necessarily reflect those of the OFR or the Department of Treasury.

Paper Summary

- Propose a housing channel through which inflation negatively affects welfare.
 - * Inflation front-loads *real* mortgage payments.
constant nominal mortgage payments
 - * Tightens the budget constraint of young households relatively more.
incomplete markets (i.e. borrowing constraints)
- Provide some evidence consistent with the model mechanism.
- Develop 2-period and full quantitative general equilibrium OG model.
 - * Extra 1p.p. in π^* lowers welfare by 0.053p.p. (consumption equivalent terms)
 - * Decompose in direct (tighter borrowing limit) and indirect (lower house prices)

Result Mechanics

- HH consumes c_1 , c_2 , housing h for both periods, mortgage scaled by house size

$$\begin{aligned} & \max_{c_1, c_2, h} \ln(c_1) + \theta \ln(h) + \beta [\ln(c_2) + \theta \ln(h)] \\ \text{s.t.} \quad & y = c_1 + S + m \cdot h && : \lambda_1 \\ & y + \frac{S}{1 + \pi} = c_2 + \frac{m \cdot h}{1 + \pi} && : \lambda_2 \\ & S \geq 0 && : \mu \end{aligned}$$

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(2) $\mu > 0$, $S = 0$ and $c_1 < \frac{(1+\pi)c_2}{\beta} \longrightarrow$ would prefer borrowing to increase c_1

- Higher π widens gap between desired c_1 (1) and achievable c_1 (2)
- Exacerbated by real m payments at $t = 1$, making constraint more binding

Discussion

1. *Optimal* inflation rate.
2. Quantitative model: possible improvements.
3. Other comments:
 - * Empirical evidence is suggestive at this stage.
 - * Optimal mortgage contract?
 - * Excessive complications in simple model.

Comment 1: Why not *optimal* inflation rate?

- You evaluate welfare cost for $\pi \in [0, 8]$. Compute **optimal** inflation rate.
- In fact, you should get **optimal inflation is negative!** Friedman ('69)
- Claim: Optimal policy wants to undo inefficiencies:
 - make real mortgage payments mimic real earnings
 - undo (or alleviate) binding credit constraint

\Rightarrow **optimal to have $\pi^* \leq -g < 0$ (??)** where g is real earnings growth
- There is an interesting logic behind optimal result. Pursue it!

Comment 2: Quantitative Model

- **Borrowing constraint.** Are HHs subject to 0 borrowing constraint? This is unreasonably restrictive and matters for welfare results. **Calibrate carefully.**
- **Bequests.** Distribute bequests in **correlation to income**. See Kaplan, Mittman, Violante (2020). If the “rich old” leave bequest to “rich young”, welfare losses will be reduced.
- **Owning vs. renting.** Welfare loss is increasing in θ , which captures the relative preference for owning vs. renting. Welfare losses are concentrated among the young but the young like to rent so θ should be lower for them. Do you have a sense of **how θ changes with age?**

Other comments

- Mechanism is very clear but the empirical evidence provided is only suggestive:
 - * Lots of economic changes between 1980s and 2010s
 - * E.g. changing age profile of earnings, productivity growth, ...
 - * Do more to cleanse results from secular changes.
- Welfare loss would not occur if implementing optimal mortgage contract:
 - * How much does indexing mortgage payments alleviate welfare loss?
- Simple model has unnecessary complications:
 - * Ability to buy a new house in period 2.
 - * Depreciation rate.
 - * Numerical example (quantitative model suffices).